

IRON AGE

Farm, Garden and Orchard Implements

American Factory—Established 1836

BATEMAN MANUFACTURING CO.

GRENLOCH, NEW JERSEY, U. S. A.

Canadian Factory
Established 1868

The Bateman-
Wilkinson Co.

LTD.
TORONTO, ONT.

Manufacturers of
the complete Iron
Age line of Gar-
den Seeders and
Wheel Hoes; Horse
Hoes, Riding and
Walking Cultiva-
tors, Potato Plant-
ers, Potato Dig-
gers, Field and
Orchard Sprayers,
etc. Catalogs for
the asking.

The services of
our Experimental
and Advisory De-
partments are at
your disposal with-
out cost. Long ex-
perience and tech-
nical training
make this advice
valuable to every
progressive farmer
or gardener.



IRON AGE

ensilage cutter



The Farmer's Savings Bank

is his silo. It is the true conservator of resources. Wherever introduced on the modern farm it has made possible the keeping of more cattle, has kept herds in better condition, and has been responsible for immense milk production increase. Silage keeps young stock thrifty and in good growing condition all Winter. It produces beef more cheaply than dry food. Cows fed ensilage will produce milk at a much lower cost.

Little need be said about the value of this method of storing up the Winter feed supply. Its value has been so thoroughly demonstrated that attention is turned chiefly to correct handling—to proper and efficient cutting and storing.

Tremendous demand has sprung up for machines that handle the crop as fast as it can be brought in, that can be depended upon not to weaken or break under heavy work, and that will cut accurately so that proper packing in the silo will assure against air holes, spoilage, undue shrinkage, etc.

The Iron Age cuts and elevates into the highest silo equally well, green corn, stover, alfalfa, oats—all crops used for the purpose. You have a choice between three models, one heavy and with a capacity for the largest requirements; the others, the two and three knife "B" machines, built a little lighter, for places where the larger capacity is not required and the larger power not available.

The horsepower referred to herein relates to steam as the basis for the figures.

Iron Age "A" Ensilage Cutter

THIS machine is not new in the sense that it is untried. It has been in wide use, especially in Canada, for about twenty years, and with occasional improvements, has been the standby friend of thousands of progressive farmers during all that time.

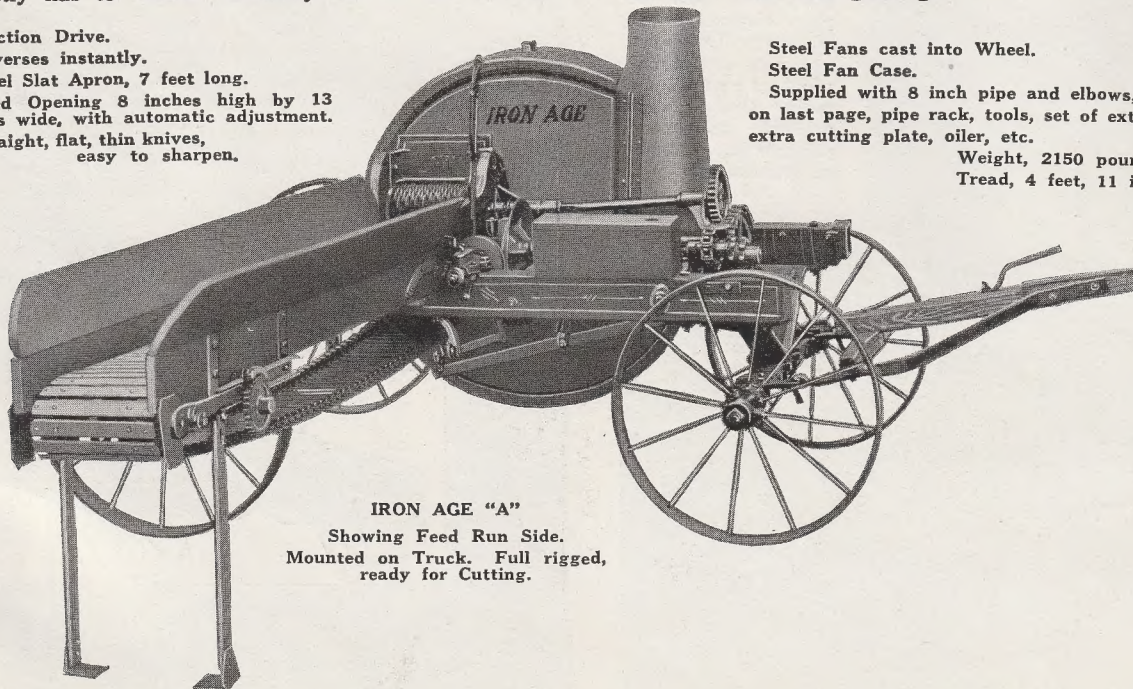
The friction wheels on the IRON AGE "A" are perfectly adapted to the work because the operator frequently has to reverse instantly and he can do this

Friction Feed

without danger of breakage. These feed wheels (shown in Fig. 494) are made of leather board and run smoothly without unnecessary friction, as the natural end thrust is taken up by ball bearings. The friction wheels wear a long time—we have had some of them in constant use by threshers for twelve seasons. The driven friction gear is connected to the feed shafts by heavy malleable chain and gearing.

Friction Drive.
Reverses instantly.
Steel Slat Apron, 7 feet long.
Feed Opening 8 inches high by 13 inches wide, with automatic adjustment.
Straight, flat, thin knives, easy to sharpen.

Steel Fans cast into Wheel.
Steel Fan Case.
Supplied with 8 inch pipe and elbows, as listed on last page, pipe rack, tools, set of extra knives, extra cutting plate, oiler, etc.
Weight, 2150 pounds.
Tread, 4 feet, 11 inches.



IRON AGE "A"
Showing Feed Run Side.
Mounted on Truck. Full rigged,
ready for Cutting.

"A" Ensilage Cutter—(Continued)

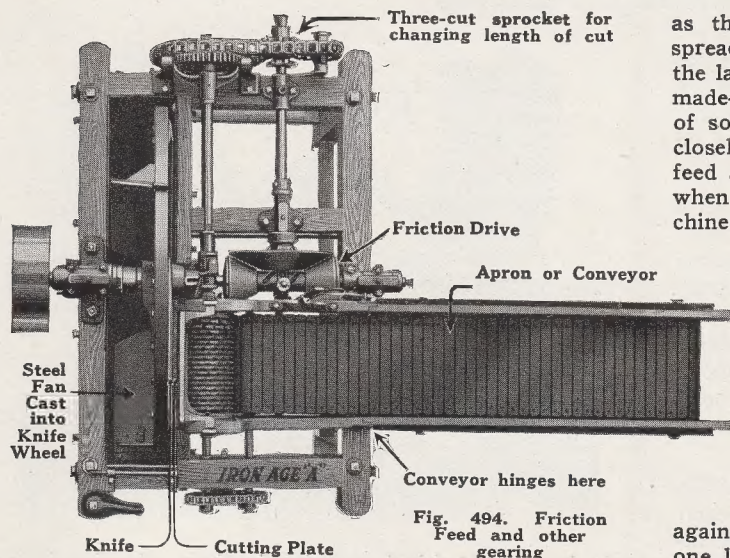


Fig. 494. Friction Drive and other gearing

Babbitted with the best material. Ample bearing surface—main box, $7\frac{3}{4}$ inches; center box, 3 inches and cup, front box, 6-inch bearing. All are adjustable.

The Apron or Conveyor is made of steel slats, riveted to a strong, steel link belt. It is set low in the feed run, meeting the bottom feed roll at about the center line and securing pressure from this roll as well as the top. The apron runs smoothly and evenly, close to the rolls. The run is 7 feet long. The part of the feed run extending beyond the frame is detachable, as shown in Fig. 494. It is bolted to the frame and the outer end is supported by steel legs. Can be easily put on or removed in a few minutes.

Each roll is $6\frac{1}{2}$ inches in diameter—the upper roll has an automatic rise or expansion (Fig. 495) of about 8 inches, or as much of this opening as is needed, and a clear width of 13 inches—a cutting space of about 104 square inches, enough to absolutely prevent clogging. The opening just about fits a bundle of fodder, the toothed rolls hold it firmly and it goes to the knives in compact form, a solid cutting surface. Bundles will go through as fast

as thrown on the apron without cutting bands or spreading. This means increased capacity and reduces the labor of feeding. Fig. 496 shows how the rolls are made—a number of small cast iron sections, with a pair of solid ends, slipped on to a square shaft and held closely together by a pin. This makes a very effective feed and the sections are easily and cheaply replaced when necessary. This is a great advantage over machines having a solid feed roll.

Length of Cut

One cog wheel gives three lengths of cut— $\frac{1}{2}$, $\frac{3}{4}$ or 1 inch—or special sprocket and gear can be supplied for special short or long cuts in alfalfa, etc.

The Reverse Lever

When feeding the machine, the lever pulls toward the operator, and to reverse he has only to shove against it. If he should carelessly get caught in the feed rolls, he would naturally lean against the lever (Fig. 497) and release himself. The one lever controls both rolls and apron at the same time. When the lever is drawn towards the operator, the apron carries the feed to the rolls, which deliver it to the knives. When the lever is thrown back from the operator so that the plunger falls in the notch, the rolls and apron cease to revolve, and the flywheel continues. In case it is desired to reverse the rolls and deck, the lever is pushed beyond the notch.

A 12 horsepower (steam) engine will operate the IRON AGE "A" machine satisfactorily without undue strain on engine or machine. The best results are obtained by driving the knife wheel at from 700 to 900 revolutions per minute. The machine can be belted from either end. Only one brace is needed when the machine is running.

IRON AGE "A" requires less power than any other makes of machines for which similar capacity is claimed, for the following reasons: The cutting surface is very compact; the webbed wheel prevents any accumulation from gathering and throwing the wheel out of balance; the knives and cutting plate give a scissors or inward shear; lost motion is avoided by combining the cutting and elevating practically into one

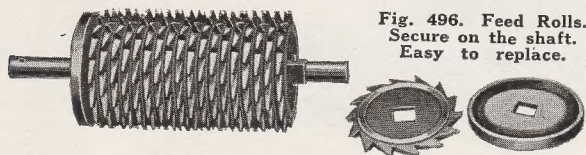


Fig. 496. Feed Rolls. Secure on the shaft. Easy to replace.

8
in.
x
13
Wide

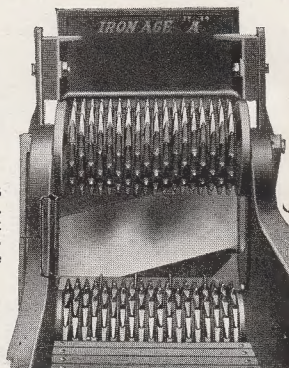


Fig. 495. Feed Opening—no clogging possible

"A" Ensilage Cutter—(Continued)

operation. The regular pulley is 12 inches in diameter and has a 7-inch face; 10, 14 or 16-inch pulley can be furnished.

The amount of fodder that can be cut depends very largely on the condition of the knife. A straight knife with a good bevel is most easily sharpened and because it is kept in shape easily, the machine takes less power and does better work.

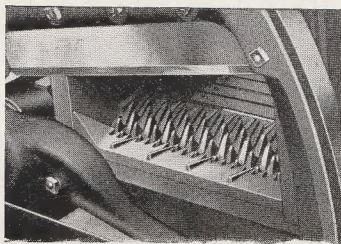


Fig. 498. Knife and Cutting Plate

Our knives (Figs. 498, 499, 500) are straight, perfectly flat, and very thin ($\frac{1}{8}$ inch), a decided advantage in cutting, of course; made of Jessop's best quality of knife steel, high carbon, crucible, oil tempered, and they hold their edge a long time. They are 21 inches long on the cutting edge, and 5 inches wide.

They are bolted to the wheel solid—they cannot break, causing further trouble and expense. No set screws are used; instead we have an expanding set collar so that all knives are set in one operation. This is the simplest, quickest, safest and most accurate way and also strengthens the knives materially. Our knives are set to begin cutting from the outside toward the axle (Fig. 495) fodder or straw that is pushed ahead of the knife toward the center is finally cut where the cutting power is greatest (as in a pair of shears, where the cutting is easiest near the rivet).

Cutting Plate

The knife and the cutting plate (Fig. 498) make an inward shear cut with the cutting plate stationary (take the shears again, for example—the lower blade is practically stationary).

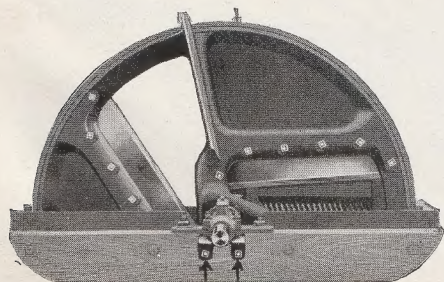


Fig. 500.
Arrows point to
Bolts and
Wedges which
adjust wheel
when necessary
Lower Steel
Fan Case
affords
protection

The plate is made of specially chilled iron, strong and tough, and keeping a square edge. It is inexpensive to replace and easily put in.

A very heavy, cast wheel (Fig. 499), with a steel band shrunk on, giving additional weight and strength.

Knife Wheel

It is filled in solid from back of knife to the fan arm or what is known as a webbed wheel—this keeps cut fodder from lodging in the arms of the wheel, dropping into the lower fan case and clogging it and reduces friction to the minimum. Also, the added weight, in the right places, gives better balance and greater momentum to the wheel.

Fig. 500 shows an adjustment for the wheel which is of real value and which is not generally understood. Suppose you have run the machine belted up at either end for considerable time—you will find that one point of the knife will cut away from the cutting plate and the other end of the knife will "hug." The wedges shown in the cut are put in so you can counteract this tendency by loosening the nuts on boxings of main shaft and draw or force in each wedge as needed. The operator who knows the value of these wedges will require less power than the one who doesn't.

The hub is bell shaped, over which a bell-shaped boxing projects, so that no string can possibly wind on the shaft.

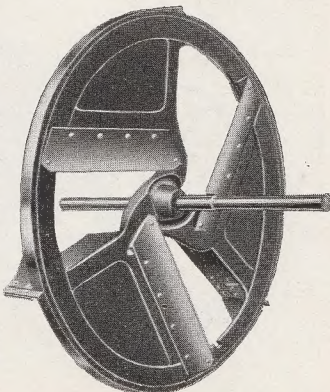
The steel shaft is $1\frac{3}{4}$ -inch, polished. It is put in place by hydraulic pressure and cannot get loose. Note bolting of knives, two bolts being nearly in line with cutting edge of knife, to hold it rigid.

The Fans

They are made of $\frac{3}{8}$ -inch tough steel and cast into the wheel (Fig. 499) half way between each knife—cannot get loose. As the knives cut the fodder, the fans blow it, in one operation, through the pipe into the silo or mow, at the same time drawing all dust into the machine.

Fig. 499.
Knife Wheel and Fans

Note Steel Band
and way
Knives are Bolted



"A" Ensilage Cutter—(Continued)

It is made in two parts of heavy, toughened pressed steel. The lower section is constructed so that the side,

Fan Case in one solid piece, covers the inside of the wood frame (Fig. 500) and protects it from wear; also, the bottom and side pieces are closely riveted and present a smooth surface inside, on which nothing can lodge to interfere with the fans or on which fodder could catch. The upper section is hinged so that the operator can get to the knives easily and, when machine is operating, is securely fastened by bolts through angle steel uprights attached to the discharge pipe.

It is made of the same heavy pressed steel as in the **Discharge Pipe** fan case with which it is connected. The discharge pipe and upper and lower fan cases may be purchased separately, as repairs, at very reasonable prices.

It is made of heavy, thoroughly seasoned hardwood, well braced, mortised and bolted. **Frame** Stands well the wear and tear of many years' hard, racking work.

The IRON AGE has less parts than any other machine on the market. Less parts to keep in order, less complication and less expense in making repairs. **Simple Construction**

Limited only by the amount that can be got to the machine and by the power used. The normal capacity is 15 to 20 tons of green corn or 3 to 5 tons of hay or straw per hour.

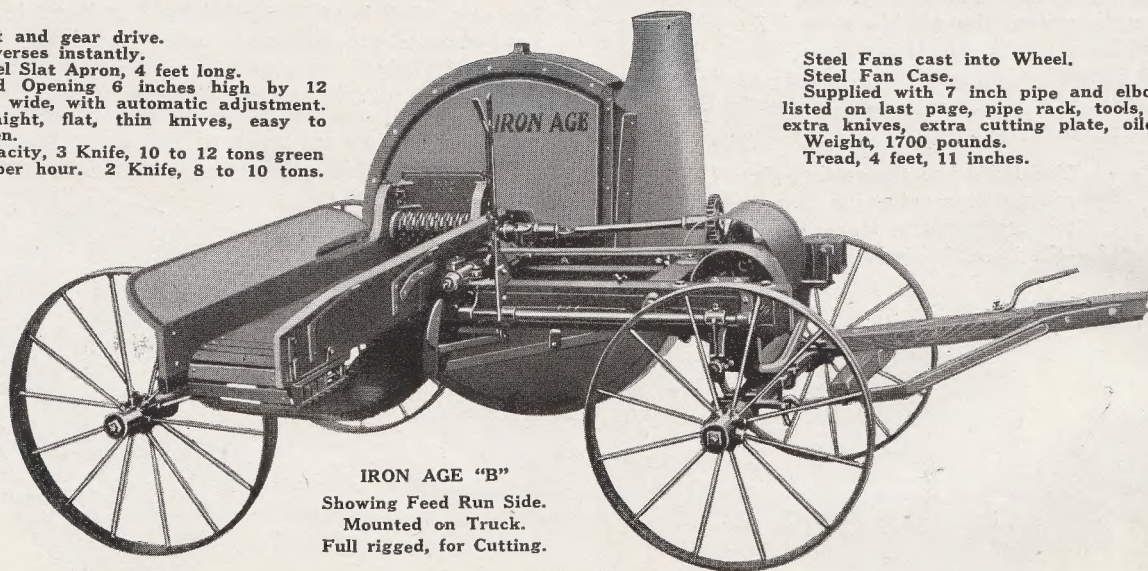
Made of galvanized iron, 8 inches in diameter, machine pressed and riveted; elbows are supplied for turning the fodder into the silo or mow. **Pipe** Twenty-six feet of straight pipe (not including reducer) are sent regularly with each machine, but the machine has sufficient capacity to elevate green corn into the highest silo or to blow dry straw 60 feet, up into and across the barn. Extra lengths are 2, 4, 8 and 12 feet and should be ordered as such. See inside back cover for manner of loading pipe for transportation.

For both the IRON AGE "A" and "B" machines we provide strong front and rear trucks; 1½-inch square steel axles with turned bearing and attached to the frame with heavy cast brackets, coupled short, 5 feet 9 inches apart; steel wheels with staggered spokes; 3-inch tires, diameter 30-inch front and 34-inch rear, and a well braced pole the steel braces for which serve also as hooks, attached to and drawing from the center of the axle. The pole may be easily detached so that it won't be in the way and for convenience in storing.

Iron Age "B" Ensilage Cutter

Belt and gear drive.
Reverses instantly.
Steel Slat Apron, 4 feet long.
Feed Opening 6 inches high by 12 inches wide, with automatic adjustment.
Straight, flat, thin knives, easy to sharpen.
Capacity, 3 Knife, 10 to 12 tons green corn per hour. 2 Knife, 8 to 10 tons.

Steel Fans cast into Wheel.
Steel Fan Case.
Supplied with 7 inch pipe and elbows, as listed on last page, pipe rack, tools, set of extra knives, extra cutting plate, oiler, etc.
Weight, 1700 pounds.
Tread, 4 feet, 11 inches.



IRON AGE "B"
Showing Feed Run Side.
Mounted on Truck.
Full rigged, for Cutting.

"B" Ensilage Cutter

This machine is built especially for the farmer, not the thrasher—for places where the larger capacity is not required and the larger power is not available. See illustration on opposite page.

3 Knife B

It is built a little lighter than the "A" all through, as it is not intended for the heavy or custom work and strain which the "A" machine is called upon to perform in the corn season, when the thrasher wants to crowd as much stuff through as possible.

2 Knife B Where less power is required, we furnish knife wheel with two knives instead of three. In this case, a 6 horsepower engine will furnish enough power for use in dry fodder and 8 horsepower in corn.

We use the belt and gear drive on this machine (Fig. 501)—it is strong, well fitted and powerful for a small machine of this kind. It can be reversed instantly. Has been used successfully for several years.

The Feed By using a belt to drive the counter shaft on cone pulleys, we cut out the probability of stripping gears when changing for another cut. On this machine you can change the cut without stopping.

Power and Speed An 8 horsepower engine should be used in dry fodder and 10 horsepower in corn. The best results are obtained by driving at from 600 to 800 revolutions per minute. See below also, for two knife machine.

Made of heavy galvanized iron, machine pressed and riveted, 7 inches in diameter. Elbows are furnished to turn the fodder into the silo or mow.

Pipe

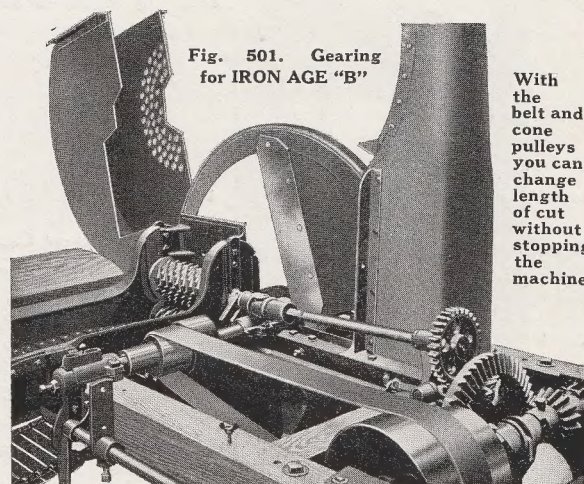


Fig. 501. Gearing for IRON AGE "B"

With the belt and cone pulleys you can change length of cut without stopping the machine

Main Shaft, 1½-inch, running in three wide bearings. Knives are 4½ ins. wide by 19 long on the cutting edge.

Other Specifications

Rolls, 5½ inches in diameter, throat 12 inches wide and the upper roll raises 6 inches automatically, giving 72 inches cutting space.

Pulley is 12-inch, but 10, 14 or 16-inch can be furnished. In other respects the "B" machine is like the "A." Same truck is used.

Capacity

For the 3 knife machine, 10 to 12 tons of green corn per hour.

For the 2 knife machine, 8 to 10 tons.

MOUNTED "A"

- | | |
|----------------|---------------------|
| 1 Machine Body | 1 2-foot Taper Pipe |
| 1 Feed Run | 1 Long Elbow in 2 |
| 1 Feed Carrier | pieces |
| 1 Pulley | 1 Short Elbow, 45° |
| 1 Face Plate | 4 Wheels |
| 1 Set Knives | 2 Axles |
| 1 12-foot Pipe | 1 Tongue |
| 1 8-foot Pipe | 1 Pipe Rack |
| 1 4-foot Pipe | |

Machines are Shipped as Follows:

MOUNTED "B"

- | | |
|----------------|---------------------|
| 1 Machine Body | 1 2-foot Taper Pipe |
| 1 Feed Run | 1 Short Elbow, 45° |
| 1 Feed Carrier | 1 Long Elbow in 2 |
| 1 Pulley | pieces |
| 1 Face Plate | 4 Wheels |
| 1 Set Knives | 2 Axles |
| 1 12-foot Pipe | 1 Tongue |
| 1 8-foot Pipe | 1 Pipe Rack |
| 1 4-foot Pipe | |

